

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fountain-type electroplating apparatus with functions of voltage detection and flow rectification, comprising:

an electroplating tank having a shell, a substrate cathode electrode arranged on top of the shell, a circumference of the substrate electrode having a plurality of joints, and an mesh shaped anode arranged at the bottom of the shell, a circumference of the mesh shaped anode having a plurality of joints;

a switcher having a first switching point and a corresponding second switching point, a first switching point and alternately operating with either the positive electrode or the negative electrode;

a plurality of connecting line, each of which having one end connected to one of the joints of the mesh shaped anode, and all of each having another ends connected jointly to a node and to both the positive electrode and the first switching point;

a plurality of detection circuits, wherein, the first end of one of the detection circuit is connected to the corresponding second switching point, and the first ends of the other of the detection circuits are connected jointly to a node and to both the negative electrode and the second switching point, all the second ends of the detection circuits are respectively connected to the joints of the substrate;

a rectification device having a hull, a separating plate arranged under the mesh shaped anode and a pipe connecting to the hull for transporting an electrolyte therein, ~~that~~ the separating plate ~~has~~ having at least a hole and ~~is being~~ connected to and arranged inside the hull; and

an overflow tank having an exit hole arranged at the bottom thereof;

wherein the electroplating tank is positioned inside the overflow tank, and the rectification device is arranged under the electroplating tank.

2. (Currently Amended) The apparatus according to claim 1, ~~wherein the apparatus further comprises~~ comprising a shielding ring arranged on top of the mesh shaped anode ~~that, the shielding ring has~~ having a width ~~ranged of~~ between 2~26 mm.

3. (Original) The apparatus according to claim 1, wherein the separating plate has a hole location at the center thereof and the separating plate is inclined from the rim thereof toward the hole in an angle between 5~40 degree,

4. (Currently Amended) The apparatus according to claim 3, wherein the shape of the separating plate is not limited to be any geometric shape, and the separating plate is ~~extended~~ extends from the central hole ~~to toward the top of the pipe that,~~ a plurality of orifices having diameter between 0.5~4 mm ~~are being~~ arranged at the end and the two extension part of the separating plate.

5. (Currently Amended) The apparatus according to claim 1, wherein the rectification device further comprises:

a baffle; and

a strut having a first end ~~connecting~~ connected to the separating plate and a corresponding second end ~~connecting~~ connected to the baffle.

6. (Currently Amended) The apparatus according to claim 1, wherein the rectification device further comprises:

a disperser having ~~plural~~ a plurality of pores;

a guiding plate having a plurality of ~~plural~~ orifices, ~~which and is being~~ connected to the hull;

an agitator having an ~~axial~~ axis and at least a propelling blade arranged at the side of the ~~axial~~ axis;

wherein, the ~~axial~~ axis of the agitator has a first end ~~connecting~~ connected to the disperser and a second end ~~connecting~~ connected to the guiding plate ~~504~~.

7. (Cancelled)

8. (Currently Amended) The apparatus according to claim ~~7~~ 1, wherein the circumference of the substrate has a first joint, a second joint and a third joint, and the three joints are spaced by an angle about 80~160 degrees from each other.

9. (Currently Amended) The apparatus according to claim ~~7~~ 1, wherein the circumference of the mesh shaped anode has a first joint, a second joint and a third joint, and the three joints are spaced by an angle about 80~160 degrees from each other.

10. (Currently Amended) The apparatus according to claim ~~7~~ 1, wherein the joints of the substrate is complementary arranged to the joints of the mesh shaped anode.

11. (Currently Amended) The apparatus according to claim 1, wherein each of the detection circuits wherein the apparatus further comprising:

~~a power supplier having a positive electrode and a negative electrode;~~

~~a switcher having a first switching point and a corresponding second switching point;~~

~~a plurality of detection circuits, each having has a first end and a second end and each of which is composed of a resistance parallel connecting connected to a voltmeter; and~~

~~a plurality of connecting line, each having one end connecting to a joint of the mesh shaped anode, and all of each having another ends connecting jointly to a node and further connecting to both the positive electrode and the first switching point;~~

~~wherein, the first end of one of the detection circuit is connected to the switch for switching between the first switch point and the second switching point, and the first ends of the other detection circuits are connected jointly to a node and further connected to both the negative electrode and the second switching point, in addition, all the second ends of the detection circuits are respectively connected to plural joints of the substrate.~~

12. (Original) The apparatus according to claim 11, wherein the switcher includes a relay for switching between the first switching point and the second switching point.

13. (New) The apparatus according to claim 1, wherein the positive electrode and the negative electrode connected to a power supplier.